AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1 and 2.   (Cancelled).

Claim 3.   (Currently Amended) [[The]] A mobile communications network ~~as claimed in claim 2~~ comprising:

one or more routing nodes for receiving data to which the IP address of a mobile station is added, and for carrying out routing of the data in accordance with routing information; and

one or more edge nodes for receiving the data routed by said routing nodes, and for transmitting the data to the mobile station corresponding to the IP address of the mobile station added to the data, wherein said mobile communications network further comprises:

a location information server for managing information about correspondence between the IP address of the mobile station and the IP address of the edge node that supervises an area visited by the mobile station, wherein

said routing nodes include a gate node;

said gate node retrieves, by accessing said location information server, the IP address of the edge node supervising the area visited by the mobile station corresponding to the IP address

of the mobile station added to the received data, and adds the IP address of the edge node to the received data;

said routing information includes information about correspondence between the IP address of the edge node and a transmission route; and

said routing nodes carry out the routing of the received data in accordance with the IP address of the edge node added to the received data and the routing information,

wherein the IP address of a group of mobile stations can be added as the IP address of the mobile station to be added to the data, wherein

said location information server manages information about correspondence between the IP addresses of the mobile stations belonging to the group and the IP address of the group of the mobile stations;

said gate node retrieves, when the IP address of the group of the mobile stations is added to the received data, the IP addresses of the edge nodes supervising the areas visited by the mobile stations corresponding to the IP address of the group of the mobile stations by accessing said location information server, replicates the received data by the number of the edge nodes, adds to each of the data the IP address of each of the edge nodes and the IP addresses of the mobile stations visiting the supervisory area of the edge node, and carries out the routing of the data.

Claim 4.   (Cancelled).

Claim 5.   (Currently Amended) [[The]] A mobile communications network as claimed in claim 2 or 3 comprising:

one or more routing nodes for receiving data to which the IP address of a mobile station

is added, and for carrying out routing of the data in accordance with routing information; and

one or more edge nodes for receiving the data routed by said routing nodes, and for

transmitting the data to the mobile station corresponding to the IP address of the mobile station

added to the data,

wherein said mobile communications network further comprises:

a location information server for managing information about correspondence between

the IP address of the mobile station and the IP address of the edge node that supervises an area

visited by the mobile station, wherein

said routing nodes include a gate node;

said gate node retrieves, by accessing said location information server, the IP address of

the edge node supervising the area visited by the mobile station corresponding to the IP address

of the mobile station added to the received data, and adds the IP address of the edge node to the

received data;

said routing information includes information about correspondence between the IP

address of the edge node and a transmission route; and

said routing nodes carry out the routing of the received data in accordance with the IP

address of the edge node added to the received data and the routing information,

wherein when said mobile station moves from the supervisory area of an old edge node to

the supervisory area of a new edge node, said moving mobile station transmits its own IP address

and the IP address of the new edge node to the old edge node; and when said old edge node

thereafter receives data to which the IP address of the moving mobile station is added, said old

edge node transmits the data to said new edge node with adding the IP address of the new edge

node to the data.

Claim 6.   (Cancelled).

Claim 7.   (Currently Amended) [[The]] A mobile communications network as

claimed in claim 6 comprising:

one or more routing nodes for receiving data to which the IP address of a mobile station

is added, and for carrying out routing of the data in accordance with routing information; and

one or more edge nodes for receiving the data routed by said routing nodes, and for

transmitting the data to the mobile station corresponding to the IP address of the mobile station

added to the data,

wherein said routing information includes information about correspondence between the

IP address of the mobile station and a transmission route, and wherein

said routing nodes carry out the routing of the received data in accordance with the IP

address of the mobile station added to the received data and the routing information,

wherein the IP address of a group of mobile stations can be added as the IP address of the

mobile station to be added to the data, and wherein

said routing nodes have group information which is information about correspondence

between the IP addresses of the mobile stations belonging to the group and the IP address of the

group of the mobile stations, replicate, when the IP address of the group of the mobile stations is

added to the received data, the received data by the number of [[the]] transmission routes

corresponding to the IP addresses of the mobile stations corresponding to the added IP address of

the group of the mobile stations in accordance with the group information and the routing information and carry out the routing of the data.

Claim 8.   (Currently Amended) [[The]] A mobile communications network ~~as claimed in claim 6 or 7~~ comprising:

one or more routing nodes for receiving data to which the IP address of a mobile station is added, and for carrying out routing of the data in accordance with routing information; and

one or more edge nodes for receiving the data routed by said routing nodes, and for transmitting the data to the mobile station corresponding to the IP address of the mobile station added to the data,

wherein said routing information includes information about correspondence between the IP address of the mobile station and a transmission route, and wherein

said routing nodes carry out the routing of the received data in accordance with the IP address of the mobile station added to the received data and the routing information,

wherein the IP address of the mobile station to be added to the data can include the IP addresses of a plurality of mobile stations, wherein

said routing nodes replicate, when the IP addresses of the plurality of the mobile stations are added to the received data, the received data by the number of [[the]] transmission routes corresponding to the IP addresses of the plurality of the mobile stations in accordance with the routing information, add to each of the data, the IP addresses of the mobile stations corresponding to each of the transmission routes, and carry out the routing of the data.

Claim 9.   (Currently Amended) [[The]] A mobile communications network as claimed in any one of claims 6-8 comprising:

one or more routing nodes for receiving data to which the IP address of a mobile station is added, and for carrying out routing of the data in accordance with routing information; and

one or more edge nodes for receiving the data routed by said routing nodes, and for transmitting the data to the mobile station corresponding to the IP address of the mobile station added to the data,

wherein said routing information includes information about correspondence between the IP address of the mobile station and a transmission route, and wherein

said routing nodes carry out the routing of the received data in accordance with the IP address of the mobile station added to the received data and the routing information,

wherein said mobile station, when it moves from the supervisory area of an old edge node to the supervisory area of a new edge node, transmits its own IP address to said new edge node, and wherein each node from the higher level routing node of said new edge node up to [[the]] a junction routing node from which [[the]] transmission routes diverge to said old edge node and to said new edge node, updates its own routing information about the moving mobile station.

Claim 10.   (Currently Amended) [[The]] A mobile communications network as claimed in any one of claims 6-8 comprising:

one or more routing nodes for receiving data to which the IP address of a mobile station is added, and for carrying out routing of the data in accordance with routing information; and

one or more edge nodes for receiving the data routed by said routing nodes, and for transmitting the data to the mobile station corresponding to the IP address of the mobile station added to the data,

wherein said routing information includes information about correspondence between the IP address of the mobile station and a transmission route, and wherein

said routing nodes carry out the routing of the received data in accordance with the IP address of the mobile station added to the received data and the routing information,

wherein said routing information includes information about correspondence between the IP address of the edge node and a transmission route, and wherein

said routing nodes carry out the routing of the received data in accordance with the IP address of the edge node added to the received data and the routing information; and

said mobile station notifies, when it moves from the supervisory area of an old edge node to the supervisory area of a new edge node, said old edge node of its own IP address and the IP address of the new edge node, and said old edge node transmits, when it thereafter receives data to which the IP address of the moving mobile station is added, the data to said new edge node with adding the IP address of the new edge node to the data.

Claim 11.   (Currently Amended) [[The]] A mobile communications network as claimed in any one of claims 1-10, further comprising:

one or more routing nodes for receiving data to which the IP address of a mobile station is added, and for carrying out routing of the data in accordance with routing information; and

one or more edge nodes for receiving the data routed by said routing nodes, and for

transmitting the data to the mobile station corresponding to the IP address of the mobile station

added to the data,

wherein said mobile communications network further comprises:

a data delivery server for delivering data, wherein said data delivery server delivers data

to said mobile station in response to a request from said mobile station.

Claim 12.   (Currently Amended) [[The]] A̲ mobile communications network as

claimed in claim 1, further comprising:

one or more routing nodes for receiving data to which the IP address of a mobile station

is added, and for carrying out routing of the data in accordance with routing information; and .

one or more edge nodes for receiving the data routed by said routing nodes, and for

transmitting the data to the mobile station corresponding to the IP address of the mobile station

added to the data,

wherein said mobile communications network further comprises:

a location information server for managing information about correspondence between

the IP address of the mobile station and the IP address of the edge node that supervises [[the]] an̲

area visited by the mobile station, wherein

each of said edge nodes receives data which is transmitted by a mobile station visiting its

own supervisory area and to which the IP address of the mobile station is added, retrieves by

accessing said location information server the IP address of the edge node supervising the area

visited by the mobile station corresponding to the IP address of the mobile station added to the

received data, adds the IP address of the edge node to the received data, and transmits the data to

said routing node;

said routing information includes information about correspondence between the IP

address of the edge node and [[the]] a transmission route; and

said routing nodes carry out the routing of the received data in accordance with the IP

address of the edge node added to the received data and the routing information.

Claim 13.   (Original)   The mobile communications network as claimed in claim

12, wherein said edge node generates and manages information about correspondence between

the IP address of the mobile station added to the received data and the IP address of the edge

node supervising the area visited by the mobile station.

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Claim 14.   (Currently Amended) The mobile communications network as claimed in

claim 13, wherein when said mobile station moves from the supervisory area of an old edge node

to the supervisory area of a new edge node during communication with another mobile station,

said moving mobile station transmits its own IP address and the IP address of the new edge node

to the edge node supervising the area visited by [[the]] a party mobile station; and said edge node

updates information about correspondence between the IP address of the moving mobile station

and the IP address of the edge node supervising the area visited by the moving mobile station.

Claim 15.   (Original)   The mobile communications network as claimed in claim

13, wherein when said mobile station moves from the supervisory area of an old edge node to the

supervisory area of a new edge node, said moving mobile station transmits its own IP address

and the IP address of the new edge node to the old edge node; and when said old edge node thereafter receives data to which the IP address of the moving mobile station is added, said old edge node transmits the data to said new edge node with adding the IP address of the new edge node to the data.

Claim 16.   (Original)   The mobile communications network as claimed in claim 12, wherein when said mobile station moves from the supervisory area of an old edge node to the supervisory area of a new edge node, said moving mobile station notifies said location information server of its own IP address and the IP address of the new edge node; and said location information server updates information about correspondence between the IP address of the moving mobile station and the IP address of the edge node supervising the area visited by the moving mobile station.

Claim 17.   (Cancelled).

Claim 18.   (Currently Amended) [[The]] A mobile communications network as claimed in claim 17, further comprising:

one or more routing nodes for receiving data to which the IP address of a mobile station is added, and for carrying out routing of the data in accordance with routing information; and

one or more edge nodes for receiving the data routed by said routing nodes, and for transmitting the data to the mobile station corresponding to the IP address of the mobile station added to the data,

wherein each of said edge nodes receives data which is transmitted by a mobile station visiting its own supervisory area and to which the IP address of the mobile station is added, and transmits the data to said routing node;

said routing information includes information about correspondence between the IP address of the mobile station and a transmission route; and

said routing nodes carry out the routing of the received data in accordance with the IP address of the mobile station added to the received data and the routing information,

wherein said mobile station, when it moves from the supervisory area of an old edge node to the supervisory area of a new edge node, transmits its own IP address to said new edge node, and wherein each node from the higher level routing node of said new edge node up to [[the]] a junction routing node from which [[the]] transmission routes diverge to said old edge node and to said new edge node, and from the junction routing node to the higher routing node of said old edge node, updates its own routing information about the moving mobile station.

Claim 19.   (Currently Amended) [[The]] A mobile communications network as claimed in claim 17, comprising:

one or more routing nodes for receiving data to which the IP address of a mobile station is added, and for carrying out routing of the data in accordance with routing information; and

one or more edge nodes for receiving the data routed by said routing nodes, and for transmitting the data to the mobile station corresponding to the IP address of the mobile station added to the data,

wherein each of said edge nodes receives data which is transmitted by a mobile station

visiting its own supervisory area and to which the IP address of the mobile station is added, and

transmits the data to said routing node;

said routing information includes information about correspondence between the IP

address of the mobile station and a transmission route; and

said routing nodes carry out the routing of the received data in accordance with the IP

address of the mobile station added to the received data and the routing information,

wherein said routing information includes information about correspondence between the

IP address of the edge node and [[the]] a transmission route, and wherein

said routing nodes carry out the routing of the received data in accordance with the IP

address of the edge node added to the received data and the routing information; and

said mobile station notifies, when it moves from the supervisory area of an old edge node

to the supervisory area of a new edge node, said old edge node of its own IP address and the IP

address of the new edge node, and said old edge node transmits, when it thereafter receives data

to which the IP address of the moving mobile station is added, the data to said new edge node

with adding the IP address of the new edge node to the data.

Claim 20.   (Cancelled)

Claim 21.   (New) A data delivery method in a mobile communications network

including one or more routing nodes and one or more edge nodes, said data delivery method

comprising the steps of:

receiving, at said routing nodes, data to which the IP address of a mobile station is added,

and carrying out routing of the data in accordance with routing information; and

receiving, at said edge nodes, the data routed by said routing nodes, and transmitting the

data to the mobile station corresponding to the IP address of the mobile station added to the data,

wherein said mobile communications network further includes:

a location information server for managing information about correspondence between

the IP address of the mobile station and the IP address of the edge node that supervises an area

visited by the mobile station, wherein

said routing nodes include a gate node;

said gate node retrieves, by accessing said location information server, the IP address of

the edge node supervising the area visited by the mobile station corresponding to the IP address

of the mobile station added to the received data, and adds the IP address of the edge node to the

received data;

said routing information includes information about correspondence between the IP

address of the edge node and a transmission route; and

said routing nodes carry out the routing of the received data in accordance with the IP

address of the edge node added to the received data and the routing information,

wherein the IP address of a group of mobile stations can be added as the IP address of the

mobile station to be added to the data, wherein

said location information server manages information about correspondence between the

IP addresses of the mobile stations belonging to the group and the IP address of the group of the

mobile stations;

said gate node retrieves, when the IP address of the group of the mobile stations is added

to the received data, the IP addresses of the edge nodes supervising the areas visited by the

mobile stations corresponding to the IP address of the group of the mobile stations by accessing

said location information server, replicates the received data by the number of the edge nodes,

adds to each of the data the IP address of each of the edge nodes and the IP addresses of the

mobile stations visiting the supervisory area of the edge node, and carries out the routing of the

data.

Claim 22.   (New) A data delivery method in a mobile communications network

including one or more routing nodes and one or more edge nodes, said data delivery method

comprising the steps of:

receiving, at said routing nodes, data to which the IP address of a mobile station is added,

and carrying out routing of the data in accordance with routing information; and

receiving, at said edge nodes, the data routed by said routing nodes, and transmitting the

data to the mobile station corresponding to the IP address of the mobile station added to the data,

wherein said mobile communications network further includes:

a location information server for managing information about correspondence between

the IP address of the mobile station and the IP address of the edge node that supervises an area

visited by the mobile station, wherein

said routing nodes include a gate node;

said gate node retrieves, by accessing said location information server, the IP address of

the edge node supervising the area visited by the mobile station corresponding to the IP address

of the mobile station added to the received data, and adds the IP address of the edge node to the received data;

said routing information includes information about correspondence between the IP address of the edge node and a transmission route; and

said routing nodes carry out the routing of the received data in accordance with the IP address of the edge node added to the received data and the routing information,

wherein when said mobile station moves from the supervisory area of an old edge node to the supervisory area of a new edge node, said moving mobile station transmits its own IP address and the IP address of the new edge node to the old edge node; and when said old edge node thereafter receives data to which the IP address of the moving mobile station is added, said old edge node transmits the data to said new edge node with adding the IP address of the new edge node to the data.

Claim 23.   (New) A data delivery method in a mobile communications network including one or more routing nodes and one or more edge nodes, said data delivery method comprising the steps of:

receiving, at said routing nodes, data to which the IP address of a mobile station is added, and carrying out routing of the data in accordance with routing information; and

receiving, at said edge nodes, the data routed by said routing nodes, and transmitting the data to the mobile station corresponding to the IP address of the mobile station added to the data,

wherein said routing information includes information about correspondence between the IP address of the mobile station and a transmission route, and wherein

said routing nodes carry out the routing of the received data in accordance with the IP

address of the mobile station added to the received data and the routing information,

wherein the IP address of a group of mobile stations can be added as the IP address of the

mobile station to be added to the data, and wherein

said routing nodes have group information which is information about correspondence

between the IP addresses of the mobile stations belonging to the group and the IP address of the

group of the mobile stations, replicate, when the IP address of the group of the mobile stations is

added to the received data, the received data by the number of the transmission routes

corresponding to the IP addresses of the mobile stations corresponding to the added IP address of

the group of the mobile stations in accordance with the group information and the routing

information and carry out the routing of the data.

Claim 24.   (New) A data delivery method in a mobile communications network

including one or more routing nodes and one or more edge nodes, said data delivery method

comprising the steps of:

receiving, at said routing nodes, data to which the IP address of a mobile station is added,

and carrying out routing of the data in accordance with routing information; and

receiving, at said edge nodes, the data routed by said routing nodes, and transmitting the

data to the mobile station corresponding to the IP address of the mobile station added to the data,

wherein said routing information includes information about correspondence between the

IP address of the mobile station and a transmission route, and wherein

said routing nodes carry out the routing of the received data in accordance with the IP

address of the mobile station added to the received data and the routing information,

wherein the IP address of the mobile station to be added to the data can include the IP addresses of a plurality of mobile stations, wherein

said routing nodes replicate, when the IP addresses of the plurality of the mobile stations are added to the received data, the received data by the number of transmission routes corresponding to the IP addresses of the plurality of the mobile stations in accordance with the routing information, add to each of the data, the IP addresses of the mobile stations corresponding to each of the transmission routes, and carry out the routing of the data.

Claim 25.   (New) A data delivery method in a mobile communications network including one or more routing nodes and one or more edge nodes, said data delivery method comprising the steps of:

receiving, at said routing nodes, data to which the IP address of a mobile station is added, and carrying out routing of the data in accordance with routing information; and

receiving, at said edge nodes, the data routed by said routing nodes, and transmitting the data to the mobile station corresponding to the IP address of the mobile station added to the data,

wherein said routing information includes information about correspondence between the IP address of the mobile station and a transmission route, and wherein

said routing nodes carry out the routing of the received data in accordance with the IP address of the mobile station added to the received data and the routing information,

wherein said mobile station, when it moves from the supervisory area of an old edge node to the supervisory area of a new edge node, transmits its own IP address to said new edge node, and wherein each node from the higher level routing node of said new edge node up to a junction

routing node from which transmission routes diverge to said old edge node and to said new edge node, updates its own routing information about the moving mobile station.

Claim 26.   (New) A data delivery method in a mobile communications network including one or more routing nodes and one or more edge nodes, said data delivery method comprising the steps of:

receiving, at said routing nodes, data to which the IP address of a mobile station is added, and carrying out routing of the data in accordance with routing information; and

receiving, at said edge nodes, the data routed by said routing nodes, and transmitting the data to the mobile station corresponding to the IP address of the mobile station added to the data,

wherein said routing information includes information about correspondence between the IP address of the mobile station and a transmission route, and wherein

said routing nodes carry out the routing of the received data in accordance with the IP address of the mobile station added to the received data and the routing information,

wherein said routing information includes information about correspondence between the IP address of the edge node and a transmission route, and wherein

said routing nodes carry out the routing of the received data in accordance with the IP address of the edge node added to the received data and the routing information; and

said mobile station notifies, when it moves from the supervisory area of an old edge node to the supervisory area of a new edge node, said old edge node of its own IP address and the IP address of the new edge node, and said old edge node transmits, when it thereafter receives data to which the IP address of the moving mobile station is added, the data to said new edge node with adding the IP address of the new edge node to the data.

Claim 27.   (New) A data delivery method in a mobile communications network including one or more routing nodes and one or more edge nodes, said data delivery method comprising the steps of:

receiving, at said routing nodes, data to which the IP address of a mobile station is added, and carrying out routing of the data in accordance with routing information; and

receiving, at said edge nodes, the data routed by said routing nodes, and transmitting the data to the mobile station corresponding to the IP address of the mobile station added to the data,

wherein said mobile communications network further includes a data delivery server for delivering data, wherein said data delivery server delivers data to said mobile station in response to a request from said mobile station.

Claim 28.   (New) A data delivery method in a mobile communications network including one or more routing nodes and one or more edge nodes, said data delivery method comprising the steps of:

receiving, at said routing nodes, data to which the IP address of a mobile station is added, and carrying out routing of the data in accordance with routing information; and

receiving, at said edge nodes, the data routed by said routing nodes, and transmitting the data to the mobile station corresponding to the IP address of the mobile station added to the data,

wherein said mobile communications network further includes:

a location information server for managing information about correspondence between the IP address of the mobile station and the IP address of the edge node that supervises an area visited by the mobile station, wherein

each of said edge nodes receives data which is transmitted by a mobile station visiting its own supervisory area and to which the IP address of the mobile station is added, retrieves by accessing said location information server the IP address of the edge node supervising the area visited by the mobile station corresponding to the IP address of the mobile station added to the received data, adds the IP address of the edge node to the received data, and transmits the data to said routing node;

said routing information includes information about correspondence between the IP address of the edge node and a transmission route; and

said routing nodes carry out the routing of the received data in accordance with the IP address of the edge node added to the received data and the routing information.

Claim 29.   (New) A data delivery method in a mobile communications network including one or more routing nodes and one or more edge nodes, said data delivery method comprising the steps of:

receiving, at said routing nodes, data to which the IP address of a mobile station is added, and carrying out routing of the data in accordance with routing information; and

receiving, at said edge nodes, the data routed by said routing nodes, and transmitting the data to the mobile station corresponding to the IP address of the mobile station added to the data,

wherein each of said edge nodes receives data which is transmitted by a mobile station visiting its own supervisory area and to which the IP address of the mobile station is added, and transmits the data to said routing node;

said routing information includes information about correspondence between the IP address of the mobile station and a transmission route; and

said routing nodes carry out the routing of the received data in accordance with the IP

address of the mobile station added to the received data and the routing information,

wherein said mobile station, when it moves from the supervisory area of an old edge node

to the supervisory area of a new edge node, transmits its own IP address to said new edge node,

and wherein each node from the higher level routing node of said new edge node up to a junction

routing node from which transmission routes diverge to said old edge node and to said new edge

node, and from the junction routing node to the higher routing node of said old edge node,

updates its own routing information about the moving mobile station.

Claim 30.   (New) A data delivery method in a mobile communications network

including one or more routing nodes and one or more edge nodes, said data delivery method

comprising the steps of:

receiving, at said routing nodes, data to which the IP address of a mobile station is added,

and carrying out routing of the data in accordance with routing information; and

receiving, at said edge nodes, the data routed by said routing nodes, and transmitting the

data to the mobile station corresponding to the IP address of the mobile station added to the data,

wherein each of said edge nodes receives data which is transmitted by a mobile station

visiting its own supervisory area and to which the IP address of the mobile station is added, and

transmits the data to said routing node;

said routing information includes information about correspondence between the IP

address of the mobile station and a transmission route; and

said routing nodes carry out the routing of the received data in accordance with the IP

address of the mobile station added to the received data and the routing information,

wherein said routing information includes information about correspondence between the IP address of the edge node and a transmission route, and wherein

said routing nodes carry out the routing of the received data in accordance with the IP address of the edge node added to the received data and the routing information; and

said mobile station notifies, when it moves from the supervisory area of an old edge node to the supervisory area of a new edge node, said old edge node of its own IP address and the IP address of the new edge node, and said old edge node transmits, when it thereafter receives data to which the IP address of the moving mobile station is added, the data to said new edge node with adding the IP address of the new edge node to the data.